

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A process ~~Process~~ for the production of nonporous spherical SiO₂ particles by hydrolytic polycondensation of tetraalkoxysilanes and/or organotrialkoxysilanes, ~~characterised in that the~~ said process comprising:
conducting said hydrolytic polycondensation of tetraalkoxysilanes and/or organotrialkoxysilanes is carried out in a medium comprising water, one or more solubilizers, solubilisers and aminoethanol or ethylenediamine ~~one or more amines~~.
2. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ a sol of primary particles is first ~~firstly~~ produced, and the resultant SiO₂ particles are subsequently brought to the desired particle size in such a way that further nucleation is prevented by continuous metered addition of corresponding silane controlled to the extent of reaction.
3. (Cancelled):
4. (Currently Amended): A process ~~Process~~ according to Claim 1, ~~characterised in that the amine is an alkanolamine, diamine, polyamine and/or primary alkylamine~~ wherein said medium contains aminoethanol.
5. (Currently Amended): A process ~~Process~~ according to Claim 1 ~~[[4]]~~, wherein said medium contains ~~characterised in that the amine is aminoethanol, ethylenediamine, octylamine or diethylenetriamine~~.
6. (Currently Amended): A process ~~Process~~ according to Claim 1 ~~Claim 1~~, wherein ~~characterised in that~~ the proportion of ethanolamine or ethylenediamine ~~the amine~~ in the medium is from 0.1 to 5% by weight, ~~preferably from 0.5 to 2% by weight~~.

7. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the one or more solubilizers ~~solubilisers~~ are in each case an alcohol, a ketone, a dialkyl sulfoxide, a pyrrolidone, an alkyl nitrile, a furan, or a dioxane ~~selected from the group consisting of alcohols, ketones, dialkyl sulfoxides, pyrrolidones, alkyl nitriles, furans and/or dioxanes.~~

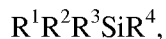
8. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the alkoxy group of the tetraalkoxysilane is in each case a methoxy, ethoxy, propoxy, butoxy or pentoxy group, ~~preferably an ethoxy group.~~

9. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the hydrolytic polycondensation is carried out at temperatures between 25 and 78°C, ~~preferably between 30 and 75°C and in particular between 40 and 55°C.~~

10. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ one or more dyes are additionally added to the medium during the hydrolytic polycondensation.

11. (Currently Amended): A process ~~Process~~ according to Claim 10, wherein said ~~characterised in that~~ the dye is a fluorescent dye.

12. (Currently Amended): A process ~~Process~~ according to Claim 10, wherein said ~~characterised in that~~ the dye is a terminally silylated (fluorescent) dye of the ~~general~~ formula:



in which

R^1 , R^2 and R^3 are identical or different and stand for halogen atoms, alkyl, aryl, alkoxy or silyloxy groups, ~~and~~

R^4 has the complex structure $A^1-B_m-C_n-A^2$, ~~in which~~

m and n are each ~~can adopt the values~~ zero or and 1,

A^1 ~~denotes~~ an alkylene ~~alkyl~~ chain or a heteroanalogous structure, ~~preferably having~~

~~from 1 to 30 chain members,~~

B ~~is~~ stands for a functional sequence,

C ~~denotes~~ a bifunctional organic sequence having a chain or ring structure which is linked to A², ~~in a suitable manner and in which~~

A² ~~is~~ stands for a fluorophoric system or a dye molecule which is bonded structurally ~~offers the possibility of bonding to C or, if n is equal to zero, is bonded to B or, if m and n are both equal to zero, is bonded to A¹.~~

13. (Currently Amended): A process ~~Process~~ according to Claim 12, wherein ~~characterised in that~~ the functional sequence B in R⁴ ~~is~~ stands for carbonyl, oxycarbonyl, aminocarbonyl, or aminothiocarbonyl, groups or a hetero atom, ~~for example oxygen, nitrogen or sulfur.~~

14. (Currently Amended): A process ~~Process~~ according to Claim 12, wherein ~~characterised in that~~ the bifunctional sequence C in R⁴ ~~is preferably~~ stands for an alkylene unit, a or for substituted alkylene unit, or a and heteroanalogous alkylene unit, groups which in each case is ~~are~~ linked to A² via a carbon, nitrogen, oxygen or sulfur atom, ~~for example as an ester or amide.~~

15. (Currently Amended): A process ~~Process~~ according to Claim 12, wherein ~~characterised in that~~ the bifunctional sequence C in R⁴ ~~is a~~ stands for structural elements of hydroxy- or aminocarboxylic acid radical, or an ester or amide ~~acids and esters or amides~~ thereof.

16. (Currently Amended): A process ~~Process~~ according to Claim 12, wherein ~~characterised in that~~ the alkoxy group is a methoxy, ethoxy, propoxy, butoxy or pentoxy group, ~~preferably an ethoxy group.~~

17. (Currently Amended): A powder ~~Powder~~ consisting of spherical SiO₂ particles obtainable a process ~~by one of the processes~~ according to Claim 1.

18. (Currently Amended): A powder ~~Powder~~ according to Claim 17, wherein characterised in that the SiO₂ particles have a mean particle diameter of between 0.05 and 10 µm.

19. (Currently Amended): A material for use ~~Use of powders consisting of SiO₂ particles, produced according to Claim 1,~~ as sorption material in chromatography, ~~for the~~ in isolation and purification of nucleic acids and proteins, in phagocytosis analyses, as constituents in diagnostic arrays, as solid phases for the investigation of molecular recognition phenomena, ~~and as solid phases~~ in heterogeneously catalysed processes, as a component of photonic crystals, and as lubricants and/or polishing agents, wherein said material is a product obtained by the process according to claim 1.

20. (New): A process according to Claim 1, wherein the proportion of amino-ethanol or ethylenediamine the amine in the medium is from 0.5 to 2% by weight.

21. (New): A process according to Claim 1, wherein the proportion of amino-ethanol or ethylenediamine the amine in the medium is from 0.5 to 3% by weight.

22. (New): A process according to Claim 1, wherein the hydrolytic polycondensation is carried out at temperatures between 30 and 75°C

23. (New): A process according to Claim 1, wherein the hydrolytic polycondensation is carried out at temperatures between 40 and 55°C.

24. (New): A process according to Claim 13, wherein the functional sequence B in R⁴ is carbonyl, oxycarbonyl, aminocarbonyl, aminothiocarbonyl, oxygen, nitrogen or sulfur.

25. (New): A process according to Claim 12, wherein m is 1, and the functional sequence B in R⁴ is carbonyl, oxycarbonyl, aminocarbonyl, aminothiocarbonyl, or a hetero atom.

26. (New): A process according to Claim 12, wherein n is 1, and the bifunctional sequence C in R⁴ is a hydroxy- or aminocarboxylic acid radical, or an ester or amide thereof.

27. (New): A process according to Claim 1, wherein said medium contains 2 – 25 % by weight water, 0.1-5 % by weight ethanolamine or ethylenediamine, 70-90 % by weight solubilizers, and 2-40 % by weight tetraalkoxysilne, based on the total weight of the medium.

28. (New): A process according to Claim 1, wherein said medium contains 2 – 25 % by weight water, 0.5-3 % by weight ethanolamine or ethylenediamine, 70-90 % by weight solubilizers, and 5-15 % by weight tetraalkoxysilne, based on the total weight of the medium.